

**International Application**

**PCT/EP2003/012610**

**Amended claims enclosed to  
the response to the Written Opinion**

**Claims:**

1. Recombinant poxvirus comprising in the viral genome at least two expression cassettes, each comprising the cowpox ATI promoter or a derivative thereof or a subsequence of the ATI promoter or the derivative thereof and a coding sequence, wherein the expression of the coding sequence is regulated by said promoter, derivative or subsequence and wherein the derivative of the cowpox ATI promoter is a sequence that has a homology of at least 60% when compared to the sequence of SEQ ID.: No. 1 and/or a sequence in which not more than 6 nucleotides are substituted, deleted and/or inserted in the sequence of SEQ ID.: No.1, wherein the subsequence of the ATI promoter has a length of at least 10 nucleotides of the sequence of SEQ ID.: No. 1 and wherein the promoter, derivative or subsequence has the biological activity of being active as a promoter.
2. Recombinant poxvirus according to claim 1, wherein the promoter, derivative or subsequence has the biological activity of being active as a Vaccinia virus late promoter.
3. Recombinant poxvirus according to anyone of claims 1 to 2, wherein the promoter, derivative or subsequence comprises nucleotides 25 to 29 or 22 to 29 of SEQ ID.: No.1.

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4. Recombinant poxvirus according to anyone of claims 1 to 3, wherein the promoters, derivatives or subsequences in the recombinant poxvirus are the same.
5. Recombinant poxvirus according to anyone of claims 1 to 4, wherein at least two expression cassettes are inserted into the same insertion site in the poxvirus genome.
6. Recombinant poxvirus according to anyone of claims 1 to 5, wherein the promoter in at least one of the expression cassettes has the sequence of SEQ ID: No. 1
7. Recombinant poxvirus according to anyone of claims 1 to 6, wherein the promoter in at least one of the expression cassettes is a derivative of the ATI promoter or a subsequence of the ATI promoter or a derivative thereof.
8. Recombinant poxvirus according to anyone of claims 1 to 7, wherein the poxvirus is selected from the group consisting of orthopoxviruses and avipoxviruses.
9. Recombinant poxvirus according to claim 8, wherein the orthopoxvirus is a vaccinia virus and wherein the avipoxvirus is selected from canarypoxvirus and fowlpoxvirus.
10. Recombinant poxvirus according to claim 9, wherein the vaccinia virus is modified vaccinia virus strain Ankara (MVA), in particular MVA-BN and MVA 575, deposited under numbers V00083008 and V00120707, respectively, at the European Collection of Animal Cell Cultures (ECACC).

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11. Recombinant poxvirus according to claim 10, wherein at least one of the expression cassettes is inserted in a naturally occurring deletion site of the MVA genome with respect to the genome of the vaccinia virus strain Copenhagen.

12. Recombinant poxvirus according to anyone of claims 1 to 11, wherein at least one of the expression cassettes is inserted in an intergenic region of the poxvirus genome.

13. Recombinant poxvirus according to anyone of claims 1 to 12, wherein at least one of the coding sequences codes for least one antigen, antigenic epitope, and/or a therapeutic compound.

14. Recombinant poxvirus according to anyone of claims 1 to 13 as vaccine or medicament.

15. Vaccine or pharmaceutical composition comprising a recombinant poxvirus according to anyone of claims 1 to 13.

16. Use of the recombinant poxvirus according to anyone of claims 1 to 13 for the preparation of a vaccine or medicament.

17. Method for introducing coding sequences into target cells comprising the infection of the target cells with the virus according to anyone of claims 1 to 13.

18. Method for producing a peptide, protein and/or virus comprising

- a) infection of a host cell with the recombinant poxvirus according to anyone of claims 1 to 13,
- b) cultivation of the infected host cell under suitable conditions, and

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- c) isolation and/or enrichment of the peptide and/or protein and/or viruses produced by said host cell.

19. Method for affecting, preferably inducing an immunological response in a living animal body including a human comprising administering the virus according to anyone of the claims 1 to 13 or the composition or vaccine according to claim 15 to the animal or human to be treated.

20. Method according to claim 19 comprising the administration of at least  $10^2$  TCID<sub>50</sub> (tissue culture infectious dose) of the virus.

21. A cell containing the virus according to any of claims 1 to 13.

22. A method for the production of a recombinant virus according to anyone of claims 1 to 13 comprising the step of inserting at least two expression cassettes into the genome of a poxvirus.

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AMENDED SHEET

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